at least one pair of second electrodes formed on both side surfaces of the other approximate half of the transformer body in its longitudinal direction,

the piezoelectric transformer being mounted on a circuit board with a power supply circuit component mounted thereon to drive the piezoelectric transformer,

the second electrodes being provided with terminals, respectively, each of the terminals being connected to said circuit board,

said piezoelectric transformer body comprising a layered structure formed by alternately stacking a plurality of inner electrodes and a plurality of piezoelectric ceramic layers in a thickness direction,

said piezoelectric transformer and said circuit board being electrically connected by at least one of a lead wire and a FPC, wherein

said piezoelectric transformer body comprises said layered structure,

said first electrodes being formed on the opposite side surfaces of said layered structure and being connected to said internal electrodes,

said second electrodes being formed on the side surfaces in areas different from those of said first electrodes of said layered structure and which are kept at a same potential and connected to said circuit board.

REMARKS

Entry of the foregoing amendments, and reexamination and reconsideration of the subject application, pursuant to and consistent with 37 C.F.R. § 1.104 and § 1.112, and in light of the following remarks, are respectfully requested.

Rejection under 35 U.S.C. 112[1]

The rejection of claims 1-9 (now 4-9) and 12-17, alleging that the subject matter of a transformer in which the electrodes on the side surfaces extend along approximately one-half of the longitudinal length of the transformer, is respectfully traversed.

The rejection misreads the claim and appears to have ignored the specification at pages 6 to 8, wherein Fig. 1 is described as having "[a]n

approximate half of the layered structure 15 in a longitudinal direction serves as an input portion 17 and the other half serves as an output portion 19" for the modified Rosen type (page 6, lines 19-21) and similarly for the Rosen type (page 7, lines 19-25, for lengths 65 and 69 in Fig. 2). The "approximate half . . . in a longitudinal direction" in Fig. 1, lengths 17 and 19, are carried over into Fig. 3, an example of an embodiment of the present invention. According, the claims are supported.

The rejection misreads the claim as requiring that the entire half length to be covered with electrode(s) when the description of the prior art device shown in Figs. 1, using the same terminology, clearly is to the contrary. The specification makes quite clear that portions 17 and 19 in Fig. 1 are each approximately one half of the longitudinal length of the device, not that the length of the electrode(s) (39, or 27/31/35) takes up the entire half side.

The statement in the rejection regarding claim 16 is not understood, but is assumed to have been addressed by the foregoing remarks.

Accordingly, withdrawal of this rejection is now believed to be warranted.

Rejection under 35 U.S.C. 102

Claims 1-4 (now only claim 4) and 7-9 stand rejected as anticipated by the Japan '033 disclosure, which rejection is respectfully traversed.

Claim 4 requires "a layered structure formed by alternately stacking a plurality of inner electrodes and a plurality of piezoelectric ceramic layers in a thickness direction." There is no disclosure in this reference of such a structure. Rather, this reference discloses a monolithic ceramic, not one made by alternatiely stacking a plurality of electrodes and ceramic layers.

Further, comparing the figures of this reference with Applicants' Fig. 1 reveals that this reference is for the same type of device, a Rosen type. Thus, Applicants' claimed requirements for electrodes on the sides of the device is not met by this reference.

As described on page 10 of the application, the present invention decreases the audible noise produced by a modified Rosen type device, and

hence the Rosen type device of Japan '033 does not describe, teach, or suggest the improvement of the invention in these claims.

For these reasons, this rejection should now be withdrawn.

Rejections under 35 U.S.C. 103

1. Claims 5 and 6, which depend back to claim 1, stand rejected hereunder over Kanayama, Yamamoto, or Sato in view of Japan '033, Japan '327 or Applicants' Fig. 1, which rejections are respectfully traversed.

As shown above, the Japan '033 reference discloses only a monolithic structure, not the layered structure recited in claim 1.

Similarly, neither Yamamoto nor Sato discloses a layered structure as recited in claim 1.

Only Fig. 18A of Kanayama discloses a multilayer device, but then the electrodes in Kanayama are not on the sides, as required by claim 1. Further, Kanayama does not appear to provide any disclosure of that device mounted to a circuit board.

Japan '327 discloses a device having a multilayered section with interior electrodes in only half (longitudinally) of the device.

In light of the foregoing, absent disclosure of a device having interior electrodes for both portions, the claimed invention would not have been obvious from any combination of these references.

2. Claims 10 and 11 stand rejected hereunder as obvious over the combination of Inou, Sakarui, or Shimizu, which rejection is respectfully traversed.

The rejection acknowledges that these references do not teach a specific mounting location.

The allegation in the rejection that positioning the mounting points as recited in the rejected claims is "optimization" is wholly without any basis, because no teaching is provided in the cited art for changing any mounting point. A rejection for obviousness cannot be based on a single reference absent some teaching or suggestion in the art what to optimize or how a device should be

modified. *In re Laskowski*, 10 PQ2d 1397 (FedCir 1989); *In re Grabiak*, 226 PQ 870, 872 (FedCir 1984); 37 C.F.R. § 1.104(c)(2) and § 1.104(d)(2).[1]

The Inoi device describes a case having leads on the side, but the piezoelectric plate has electrodes only on top and bottom. Supports are disclosed in Fig. 8, but absent any disclosure in the Inoi reference that the drawings are made to scale, *In re Wright*, 193 USPQ 332, 335 (C.C.P.A. 1977), there is no suggestion for mounting as recited in these claims.

The disclosures of Sakurai and Shimizu are likewise deficient in teaching the claimed mounting conditions.

Instead, Kanayama discloses (at col. 59, first full paragraph) mounting with portions that are 1/6th of the longitudinal length, but not those about 1/5th of the longitudinal length. Further, Kanayama's device does not appear to be mounted on a circuit board but rather is received in a case.

As mentioned above, as disclosed at page 10 (lines 5-14) and page 13, and the paragraph following Table 2, proper positioning of the fixing member reduces the level of audible sound. Such a result is not disclosed by the cited references.

Accordingly, this rejection should be withdrawn.

3. Claims 12-17, which all relate back to claim 10, stand rejected hereunder as obvious over Yamamoto in view of Japan '033 and Inoi, which rejection is respectfully traversed.

As shown in the previous rejection, Inoi fails to teach mounting in a manner to reduce audible sound.

Yamamoto and Japan '033 are similarly deficient by apparently not teaching about sound reduction in connection with the mounting method. The mere fact that an elastomeric mount is used in these claims does not accomodate

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[1] *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (the examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references").

See also In re Kotzab, 55 USPQ2d 1313 (Fed. Cir. 2000)("Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference").

the previously-noted deficiencies in the references about failing to teach noise reduction by means of the claimed mounting structure/method.

Accordingly, this rejection should also now be withdrawn.

Conclusion

In light of the foregoing amendments and remarks, withdrawal of all of the rejections, and further and favorable action, in the form of a Notice of Allowance, are believed to be next in order, and such actions are earnestly solicited.

Petition for Extension of Time

Pursuant to the provisions of 37 CFR 1.136(a), Applicants hereby petition for a three month extension of time to 16 January 2003 subsequent to having filed a Notice of Appeal on 16 August 2002. A check in the amount of $ 930.00 is attached. If this paper should necessitate any fees under 37 C.F.R. § 1.16 or § 1.17 not provided, or if there has been an overpayment, please debit or credit as necessary the Deposit Account No. 502144.

Respectfully submitted,

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15 January 2003

CERTIFICATE OF MAILING OR TRANSMISSION – 37 CFR 1.8

I hereby certify that I have a reasonable basis that this paper, along with any referred to above, (i) are being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231, or (ii) are being transmitted to the U.S. Patent & Trademark Office in accordance with 37 CFR § 1.6(d).

DATE: 1/15/03

NAME: H. McLennand

SIGNATURE: Heather A. McLennand

APPENDIX SHOWING MARK-UPS OF AMENDMENTS

4. (Amended.) A piezoelectric transformer [as claimed in claim 3] comprising
a piezoelectric transformer body including
a piezoelectric ceramic rectangular plate,
a pair of first electrodes formed on both side surfaces of an approximate half of the transformer body in its longitudinal direction, and
at least one pair of second electrodes formed on both side surfaces of the other approximate half of the transformer body in its longitudinal direction,
the piezoelectric transformer being mounted on a circuit board with a power supply circuit component mounted thereon to drive the piezoelectric transformer,
the second electrodes being provided with terminals, respectively, each of the terminals being connected to said circuit board,
said piezoelectric transformer body comprising a layered structure formed by alternately stacking a plurality of inner electrodes and a plurality of piezoelectric ceramic layers in a thickness direction,
said piezoelectric transformer and said circuit board being electrically connected by at least one of a lead wire and a FPC, wherein
said piezoelectric transformer body comprises said layered structure,
said first electrodes being formed on the opposite side surfaces of said layered structure and being connected to said internal electrodes,
said second electrodes being formed on the side surfaces in areas different from those of said first electrodes of said layered structure and which are kept at a same potential and connected to said circuit board.